

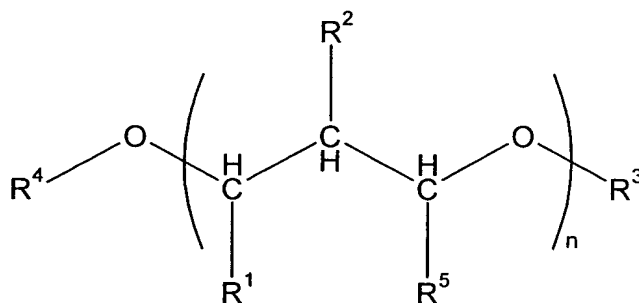
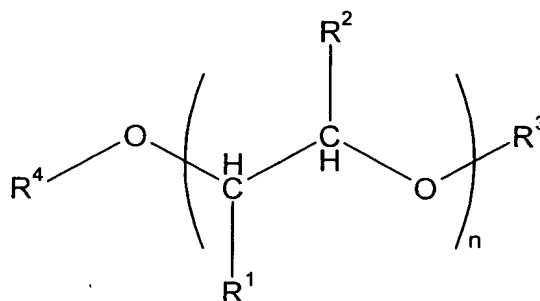
## CLAIMS

What is claimed is:

1. A method for stabilizing a halogen-containing polymer comprising adding to said polymer a thermally stabilizing amount of a mixture comprising:

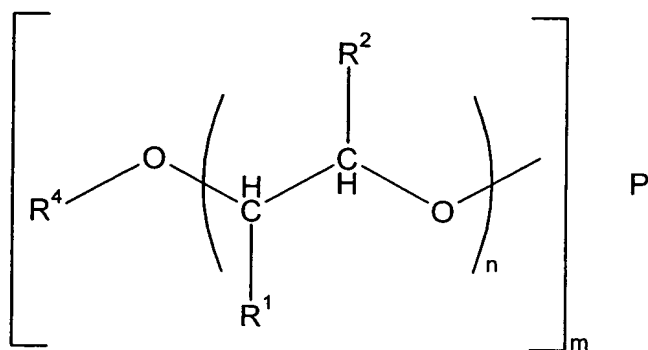
5 A) at least one polyalkylene glycol of general formula:

10 or



or

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wherein:

10  $R^1$ ,  $R^2$ , and  $R^5$  are independently selected from the group consisting of hydrogen, alkyl, hydroxyl, hydroxyalkyl, thiol, and thioalkyl;

$R^3$  and  $R^4$  are independently selected from the group consisting of hydrogen, alkyl, and acyl; and

$n$  is an integer of from 1 to 20;

$m$  is 3 and the three substituents in  $P$  can be the same or different; and

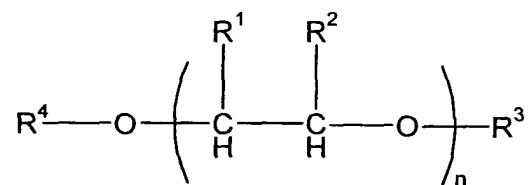
15 B) at least one metal salt of a strong acid selected from the group consisting of perchloric acid, trifluoroacetic acid, trifluoromethanesulfonic acid, alkylsulfuric acid, phosphotungstic acid,  $HPF_6$ ,  $HBF_4$ , and  $HSbF_6$ .

2. The method of claim 1 wherein the polyalkylene glycol is selected from the group consisting of diethylene glycol, triethylene glycol, tetraethylene glycol, pentaethylene glycol, 20 hexaethylene glycol, heptaethylene glycol, dipropylene glycol, tripropylene glycol, tetrapropylene glycol, and polyethylene glycol or polypropylene glycol of molecular weights in the range of from about 100 to about 500.

0192-PA

3. The method of claim 1 wherein the strong acid is perchloric acid or trifluoromethanesulfonic acid.
4. The method of claim 1 wherein the mixture further comprises at least one additional additive or stabilizer.
5. The method of claim 4 wherein the additional additive or stabilizer is selected from the group consisting of polyols, disaccharide alcohols, glycidyl compounds, hydrotalcites, zeolites, fillers, metal soaps, alkali metal and alkaline earth metal compounds, lubricants, plasticizers, phosphites, pigments, epoxy compounds, antioxidants, UV absorbers, light stabilizers, optical brighteners, and blowing agents.
6. The method of claim 1 wherein the halogen-containing polymer is polyvinyl chloride.
7. A thermally stable resin composition comprising a halogen-containing polymer and a thermally stabilizing amount of a mixture comprising:
- A) at least one polyalkylene glycol of general formula:

15



wherein:

- R<sup>1</sup> and R<sup>2</sup> are independently selected from the group consisting of hydrogen and alkyl;
- R<sup>3</sup> and R<sup>4</sup> are independently selected from the group consisting of hydrogen, alkyl, and acyl; and
- n is an integer of from 1 to 20; and

**0192-PA**

- B) at least one metal salt of a strong acid selected from the group consisting of perchloric acid, trifluoroacetic acid, trifluoromethanesulfonic acid, alkylsulfuric acid, phosphotungstic acid,  $\text{HPF}_6$ ,  $\text{HBF}_4$ , and  $\text{HSbF}_6$ .
8. The composition of claim 7 wherein the polyalkylene glycol is selected from the group consisting of diethylene glycol, triethylene glycol, tetraethylene glycol, pentaethylene glycol, dipropylene glycol, tripropylene glycol, tetrapropylene glycol, and polyethylene glycol or polypropylene glycol of molecular weights in the range of from about 100 to about 500.
9. The composition of claim 7 wherein the strong acid is perchloric acid or trifluoromethanesulfonic acid.
10. The composition of claim 7 wherein the mixture further comprises at least one additional additive or stabilizer.
11. The composition of claim 10 wherein the additional additive or stabilizer is selected from the group consisting of polyols, disaccharide alcohols, glycidyl compounds, hydrotalcites, zeolites, fillers, metal soaps, alkali metal and alkaline earth metal compounds, lubricants, plasticizers, phosphites, pigments, epoxy compounds, antioxidants, UV absorbers, light stabilizers, optical brighteners, and blowing agents.
12. The composition of claim 7 wherein the halogen-containing polymer is polyvinyl chloride.
13. The composition of claim 1 wherein the stabilizer is phosphite-free.